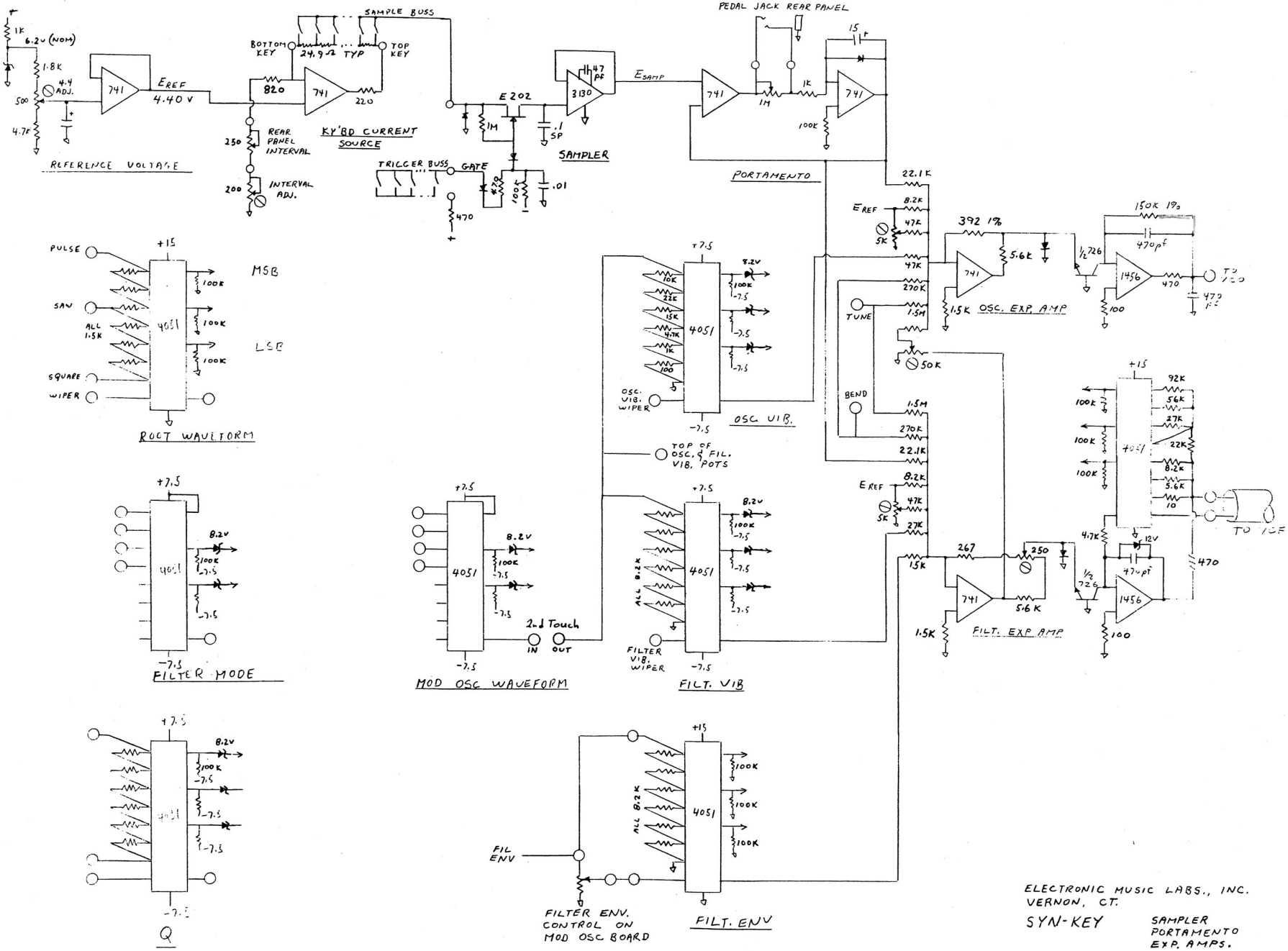
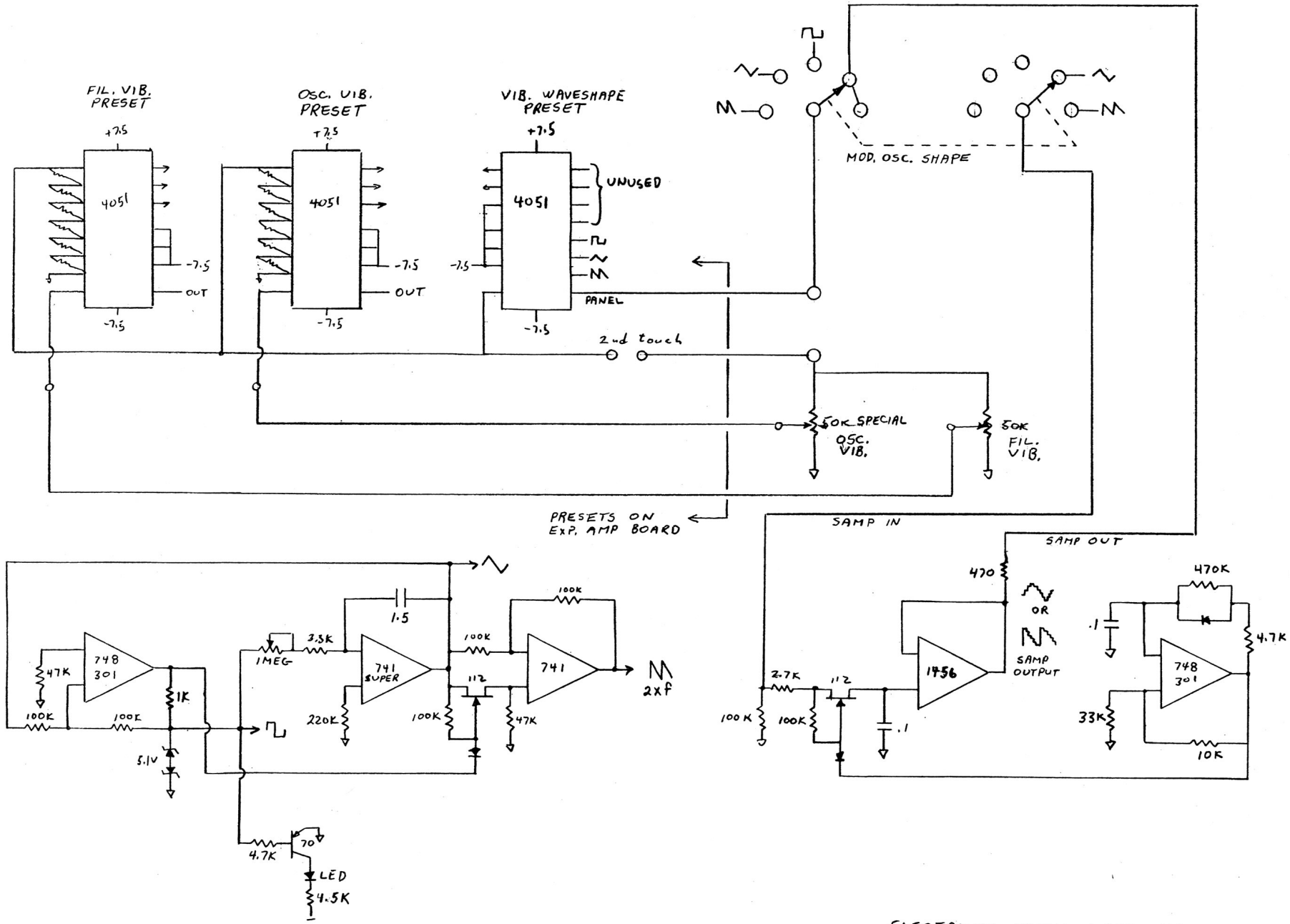
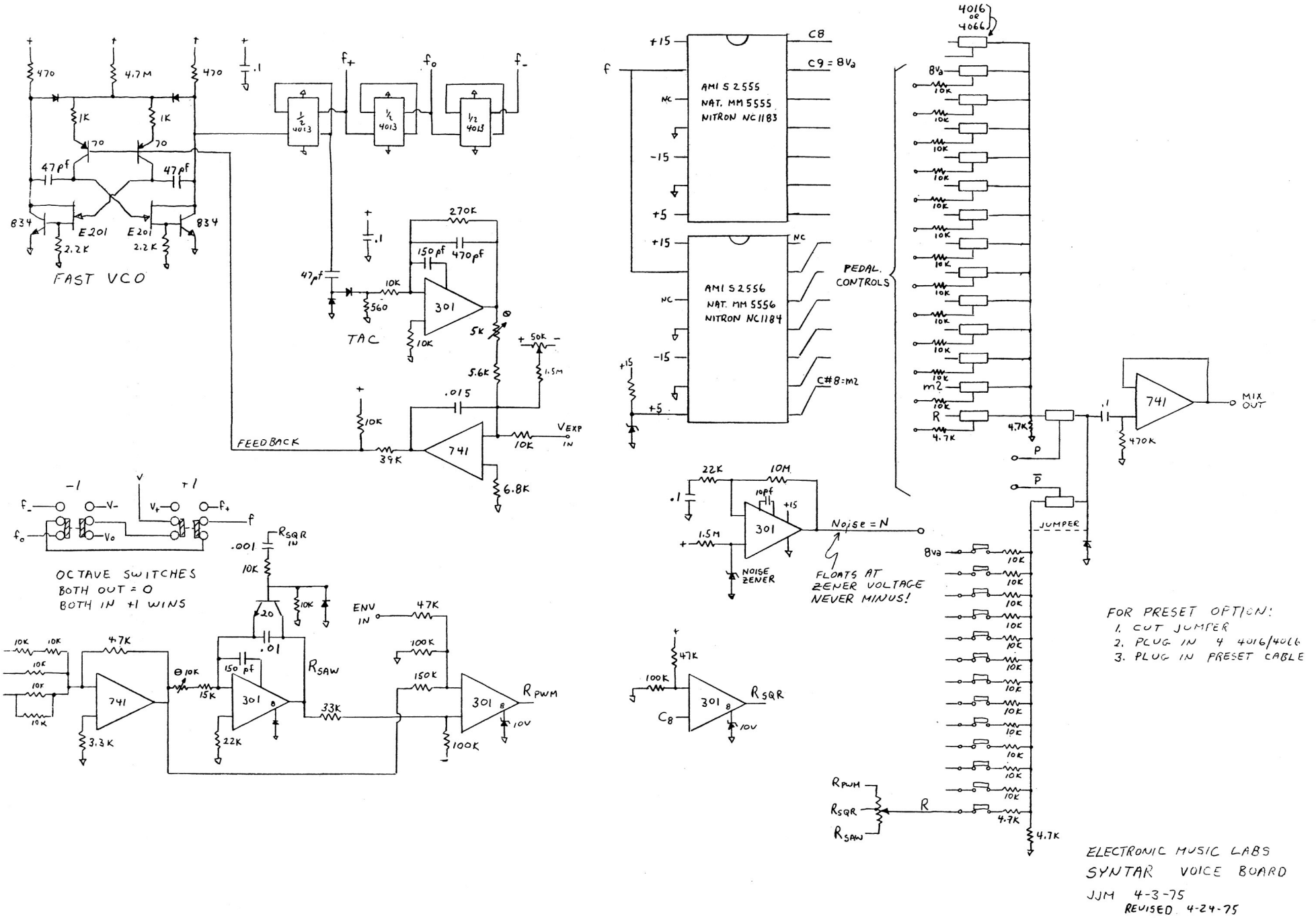
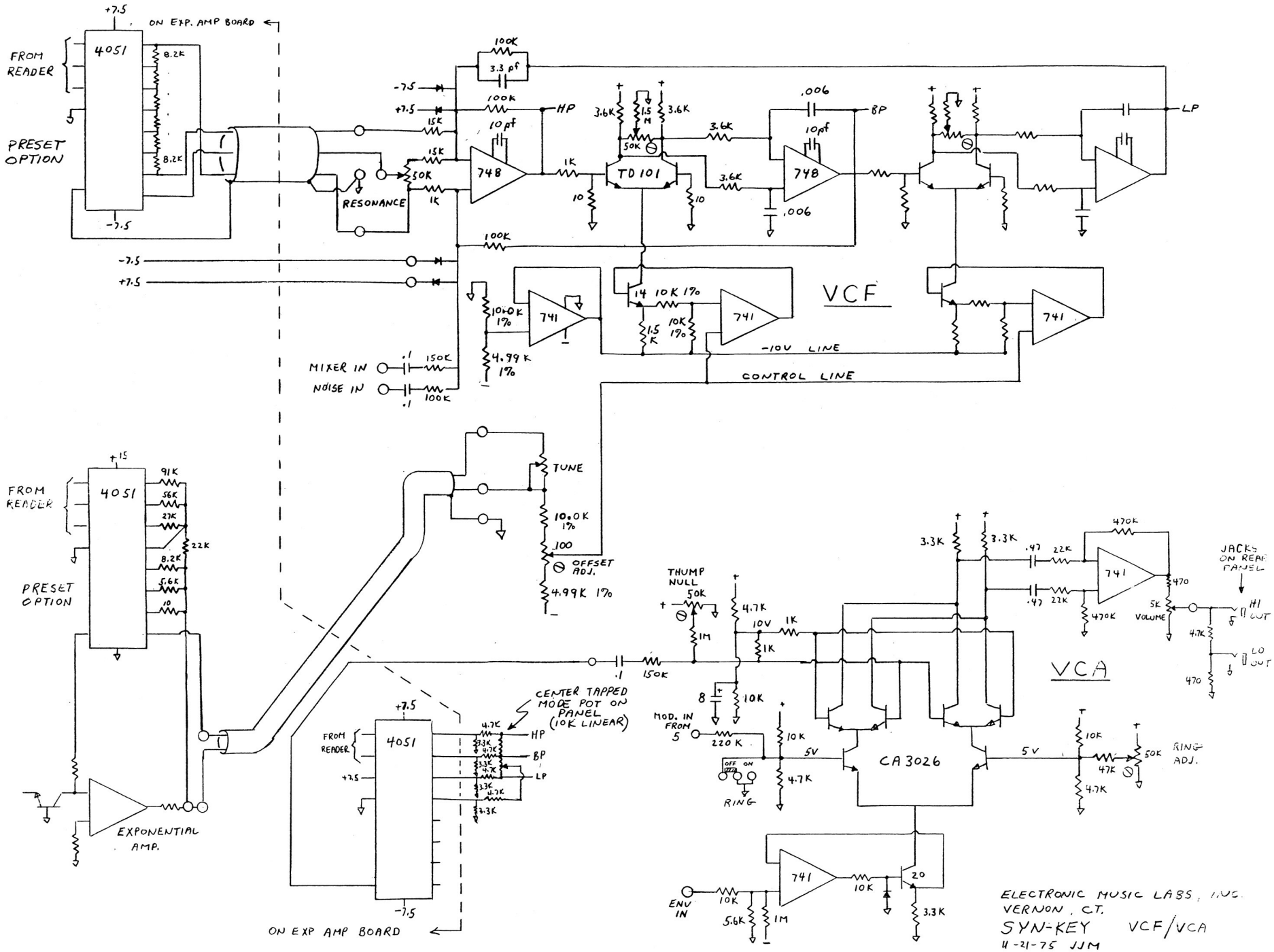
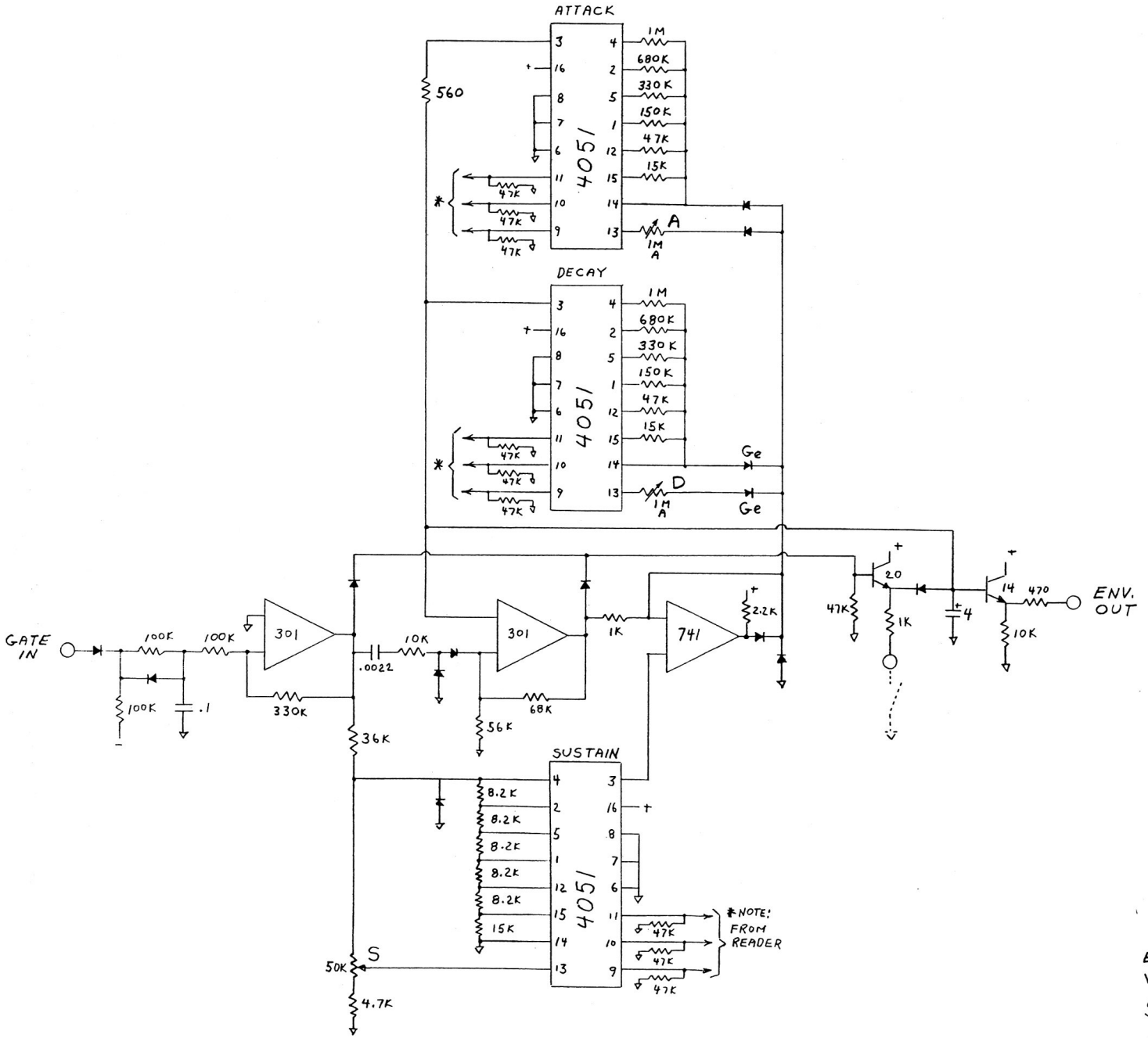

REFERENCE VOLTAGE
6.2V (NOM)
4.4 ADJ.
EREF 4.40 V
KY'BD CURRENT SOURCE
SAMPLE BUSS
BOTTOM KEY
TOP KEY
24.9Ω TYP
REAR PANEL INTERVAL
INTERVAL ADJ.
TRIGGER BUSS
GATE
SAMPLER
E 202
ESAMP
PEDAL JACK REAR PANEL
PORTAMENTO
OSC. EXP. AMP
FILT. EXP AMP
OSC VIB.
FILT. VIB
FILTER ENV. CONTROL ON MOD OSC BOARD
FILT. ENV
ROOT WAVEFORM
FILTER MODE
MOD OSC WAVEFORM
Q
MSB
LSB
TUNE
BEND
2nd Touch
TO VCF
ELECTRONIC MUSIC LABS., INC.
VERNON, CT.
SYN-KEY
SAMPLER
PORTAMENTO
EXP. AMPS.
PRESETS
11-24-75 JJM



ELECTRONIC MUSIC LABS., INC.
SYN-KEY MODULATION OSC
JJM - 5-23-75
REVISED 11-24-75


FAST VCO
TAC
FEEDBACK
OCTAVE SWITCHES
BOTH OUT = 0
BOTH IN +1 WINS
AMI S2555
NAT. MM5555
NITRON NC1183
AMI S2556
NAT. MM5556
NITRON NC1184
PEDAL CONTROLS
4016 or 4066
NOISE ZENER
FLOATS AT ZENER VOLTAGE NEVER MINUS!
JUMPER
FOR PRESET OPTION:
1. CUT JUMPER
2. PLUG IN 4 4016/4066
3. PLUG IN PRESET CABLE
ELECTRONIC MUSIC LABS
SYNTAR VOICE BOARD
JJM 4-3-75
REVISED 4-24-75

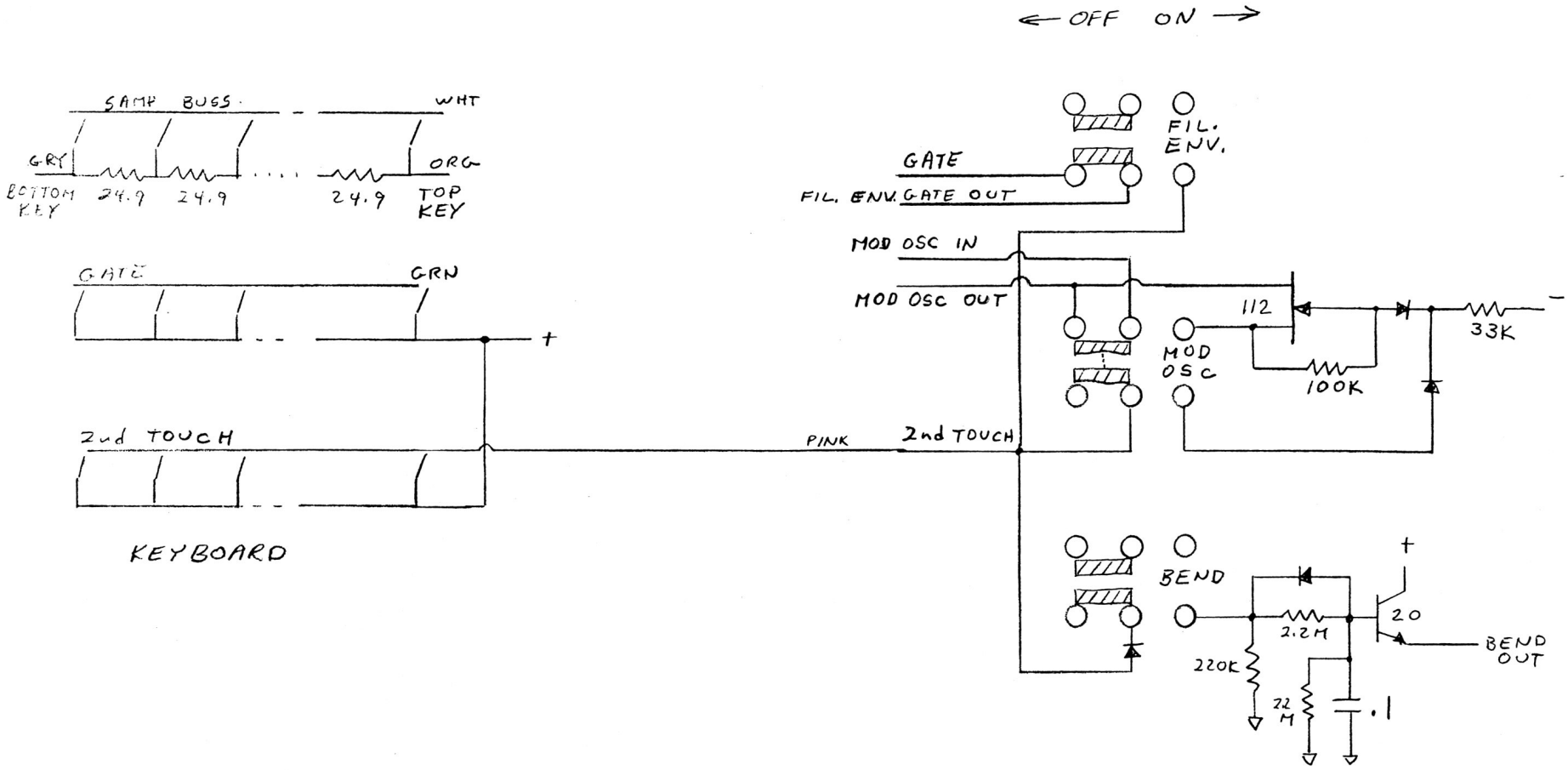

+7.5
ON EXP. AMP BOARD
FROM READER
4051
8.2K
8.2K
PRESET OPTION
-7.5
100K
3.3 pf
-7.5
+7.5
100K
HP
15K
10 pf
15K
50K
RESONANCE
1K
748
1K
10
TD 101
10
3.6K
1.5 M
3.6K
50K
3.6K
.006
BP
10pf
3.6K
748
.006
LP
100K
-7.5
+7.5
10.0K 1%
741
14 10K 1%
741
VCF
1.5 K
10K 1%
741
-10V LINE
CONTROL LINE
4.99 K 1%
MIXER IN
.1
150K
NOISE IN
.1
100K
+15
FROM READER
4051
91K
56K
27K
22K
8.2K
5.6K
10
PRESET OPTION
TUNE
10.0K 1%
100
OFFSET ADJ.
4.99K 1%
THUMP NULL
50K
1M
4.7K
10V
1K
1K
.1
150K
8
10K
MOD. IN FROM 5
220 K
OFF ON
RING
10K
5V
4.7K
CA 3026
5V
10K
47K
50K
RING ADJ.
4.7K
3.3K
3.3K
.47
22K
470K
741
470
5K VOLUME
470K
JACKS ON REAR PANEL
HI OUT
4.7K
LO OUT
470
VCA
CENTER TAPPED MODE POT ON PANEL (10K LINEAR)
+7.5
FROM READER
4051
4.7K
3.3K
4.7K
HP
BP
LP
+7.5
-7.5
ON EXP AMP BOARD
EXPONENTIAL AMP.
ENV IN
10K
741
20
10K
5.6K
1M
3.3K
ELECTRONIC MUSIC LABS, INC.
VERNON, CT.
SYN-KEY VCF/VCA
11-21-75 JJM

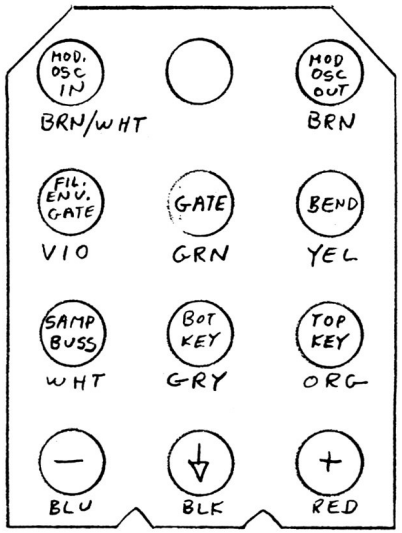


ELECTRONIC MUSIC LABS., INC.
VERNON, CT. 06066

SYN-KEY® ENVELOPES

JJM 4-8-76

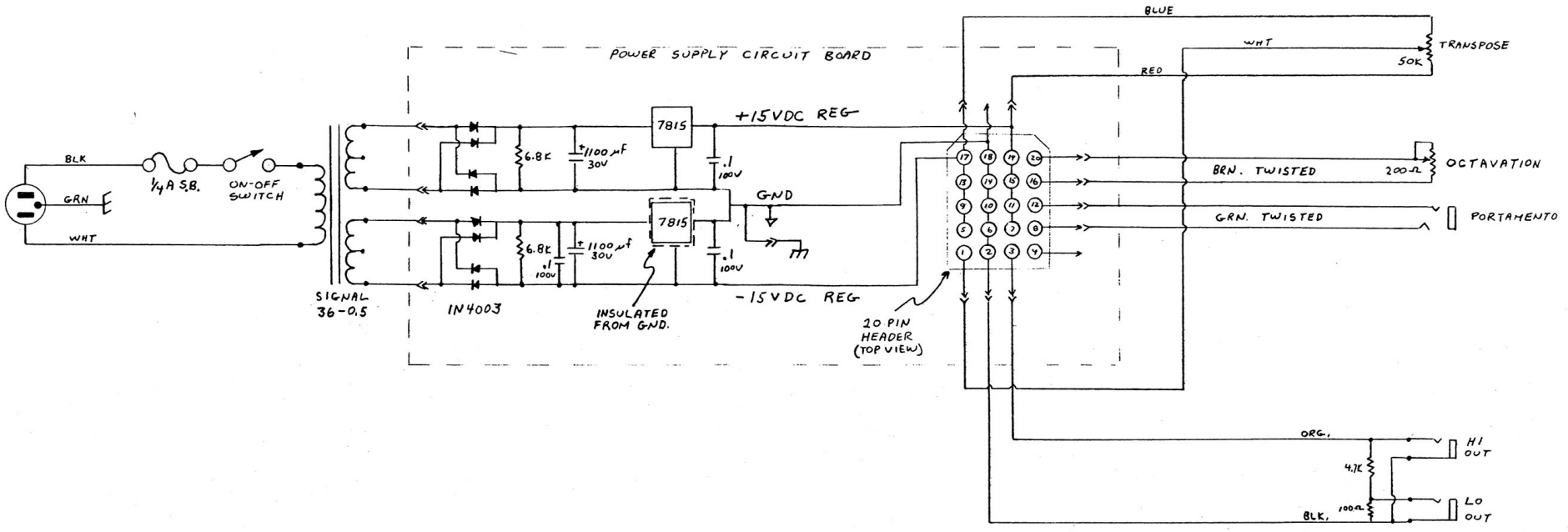




ELECTRONIC MUSIC LABS., INC.
VERNON, CT. 06066

SYN-KEY KEYBOARD WIRING

JJM 11-24-75



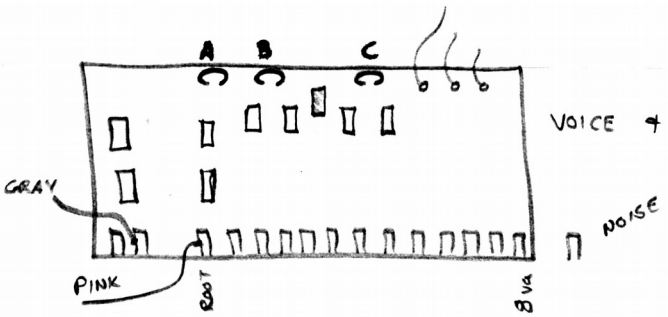
ELECTRONIC MUSIC LABS., INC.
BOX H, VERNON, CT. 06066

SYN-KEY® POWER SUPPLY AND REAR PANEL WIRING

JJM 3-22-76

EML SYNLKEY

TRIMPOT CALLOUT

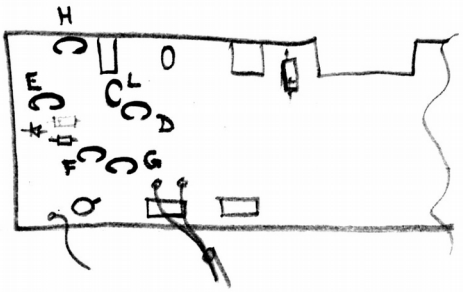


VOICE + OSC BD.

A – 4.5 m Sec/TL

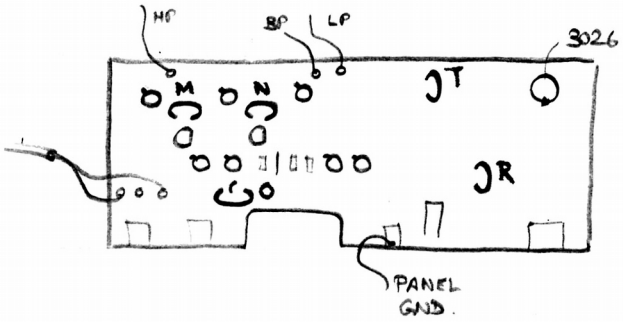
B – OSC. LINEARITY

C – PULSE WIDTH



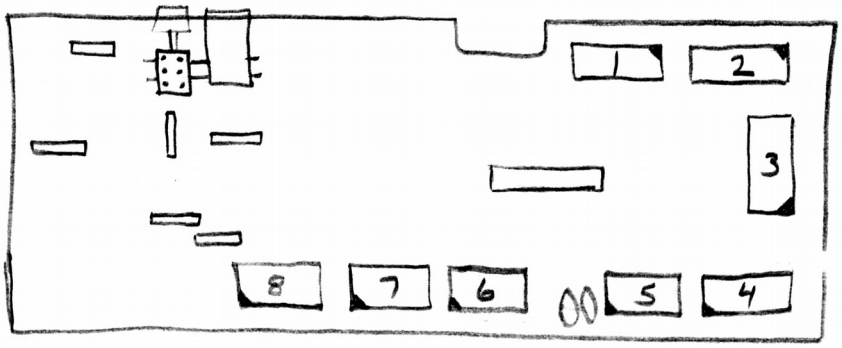
EXP AMP + PRESET BD.

D – LOW KEY (FILTER)
E – E ref
F – [redacted] FILTER INTERACTION NULL
G – SCALE (FILTER)
H – SCALE 1046 (OSC)
L – LOW 87 (OSC)



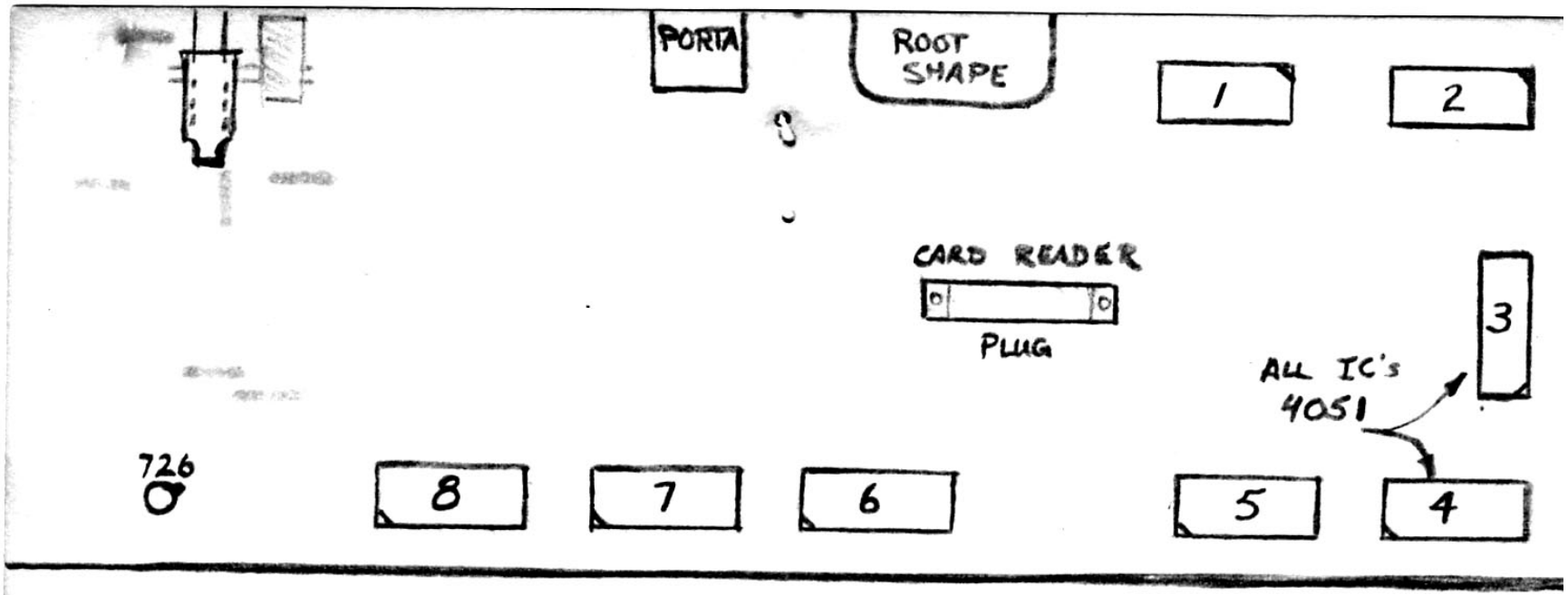
FILTER + VCA BD.

M – } ½ FILTER AC NULL
N – }
O – FILTER OFFSET
R – RING MOD.
T – VCA THUMP NULL



4051 KEY

1, FILT. CONTROL – VIB.
2, OSC. VIB.
3, MOD OSC SHAPE
4 FILT – LP, BP, HP
5, FILT – Q
6 WAVESHAPE
7 FILT CONTROL – ENV.
8, FILT TUNE

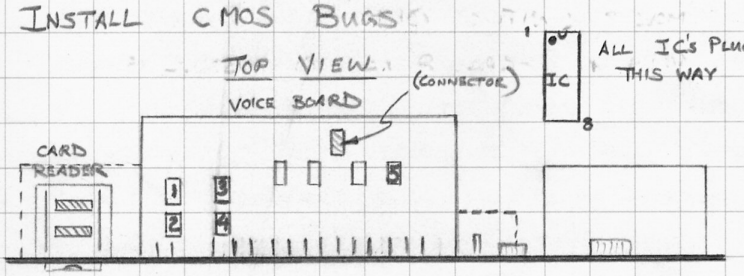


SYN•KEY EXP. AMP 4 PRESET BD.

1	FILT. VIB. CONT.	5	FILTER Q
2	OSC. VIB.	6	WAVESHAPE
3	MOD. OSC. SHAPE	7	FILT. ENV. CONT.
4	FILTER MODE	8	FILTER TUNE

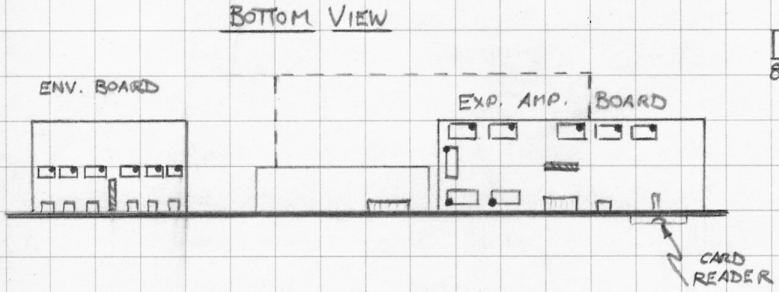
EML SYN●KEY CHECKOUT PROCEEDURE

1. INSTALL CMOS BUGS



C-MOS

1&2. 4013
3. 5832 N
4. 5833 N
5. 4016 OR JUMP PIN 8-9

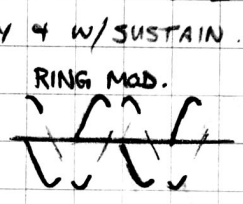


ALL C-MOS
(14.) 4051

2. CLIP SCOPE PROBE TO SAMPLED VOLTAGE (CAP) — PLUG KEYBOARD
3. POWER ON
   A. CHECK FOR VOLTAGE TRACK W/ KEYBOARD
   B. CHECK FOR MOD OSC. LED FLASH (RATE)
4. CHECK P.S. +15 & -15 VOLTS & NO (mV) RIPPLE OR NOISE — ALSO ±7.5V ZENERS
5. CONNECT DVM TO 8.2k-Ω RESISTOR — SET E_{ref} TO 4.40 VOLTS. — BLUE POT E
6. SET BLUE POT F. FULL CCW. (FILTER INTERACTION NULL)
7. CONNECT DVM TO GRAY LEAD ON +1 OCTAVE SW., LOOK AT ROOT SWITCH (PINK) WITH SCOPE ON 1 mSec/div — SET BLUE POT A FOR 4½ div. ⊓⊔ CYCLE. (4.5 mSec/⊓) WITH DVM @ 1.00 VOLTS.
8. SET TUNE AND INTERVAL CONTROLS CENTRAL. (BACK PANEL)
   A. MAKE SURE BLUE POT B (LINEARITY) IS CENTRAL.
9. WITH SCOPE ON X-Y DISPLAY AGAINST STD. (87/1046) & ROOT @ /\
   A. TUNE BLUE POT L (LOW 87) W/ LOW F KEY DOWN;
   B. TUNE BLUE POT H (HI C) W/ UPPER C KEY DOWN;
   } FOR STANDSTILL LISSAJOUS
10. CHECK FOR OSC. LINEARITY — LOOK AT MIDDLE F KEYS
    A. SET BLUE POT B TO INCREASE ERROR (ROLL RATE OF PATTERN)
    B. USE BACK PANEL TUNE & INT. TO STANDSTILL 87/1046
    C. REPEAT A. & B. UNTIL MIDDLE F's & C's ARE STANDSTILL OR VERY SLOW ROLL. — OSC IS NOW LINEAR
    D. REPEAT 8. & 9. TO CENTER REAR PANEL KNOBS
11. SET ROOT TO PULSE WIDTH (FULL CCW) AND FILTER SUSTAIN FULL CW. & +1 OCTAVE (WORST CASE)
    A. HIT KEY AND CHECK P.W. MOD.
    B. ADJUST BLUE POT C FOR KEY UP ⊓ 50% AND KEY DOWN ⊓ 5-10%

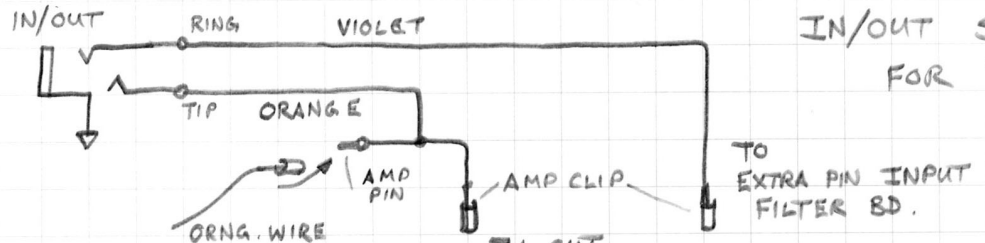
SYNKEY FILTER AND VCA.

1. SET TUNE JUST PAST 2 & Q TO MAX. (FULL CW) [ALL OTHERS MIN]
2. CONNECT DVM BETWEEN JUMPER WIRE (−) [−10V] & BLUE POT ○ WIPER (FILTER OFFSET)
   JUMPER BLACK (FILTER DRIVE) TO GND. (SHORTED)
3. ADJUST OFFSET TO +.003 VOLTS (2 or 3 mV.) — REMOVE JUMPER & DVM
4. LOOK AT LOW PASS (PURPLE) W/ SCOPE — TUNE FILTER EXP. AMP. (CHECK FOR SCREAM)
   A. HIT UPPER C KEY AND ADJUST BLUE POT G FOR MAX AMPLITUE
   B. HIT LOW F KEY AND ADJUST BLUE POT D FOR MAX AMPLITUDE
   C. REPEAT A. & B. UNTIL HIGH TO LOW AMPLITUDE IS CONSTANT
      CHECK FOR UNEVEN GAIN (DIP IN MIDDLE OR ENDS) OF KEYBOARD RANGE.
      NOTE: BLUE TRIMPOTS D. & G. INTERACT & ROTATION IS OPPOSITE.
5. SWITCH ROOT OFF & SET FILTER MOD. OSC. CONTROL TO MAX (FULL CW) W/ MOD OSC @7 SPEED
   * LO Q (FULL CCW).
   A. ADJUST BLUE POT N (½ FILTER AC NULL) FOR MINIMUM AMPLITUDE W/ UPPER C
   B. LOOK AT HIGH PASS (BROWN) AND ADJUST BLUE POT M (½ FILTER AC NULL)
      FOR MINIMUM LEVEL (SCOPE @ 50mV/div.)
   C. REPEAT A. & B UNTIL BEST MINIMAL LEVEL OVER KB RANGE
      AT HI & LO Q IS OBTAINED.
6. SET FILTER CONTROLS OFF AND LOOK AT OUTPUT JACK W/ SCOPE
   A. PULSE A KEY AND SET BLUE POT T (THUMP NULL) FOR MINIMUM SPIKE KEY DOWN
   B. SWITCH ROOT IN & VCA SUSTAIN MAX. (FULL CW) — SHOULD HAVE STEADY SINE.
   C. SWITCH RING MOD. IN AND ADJUST BLUE POT R FOR EQUAL AMPLITUDE
   D. CHECK VCA FOR PROPER ATTACK & DECAY & W/ SUSTAIN.

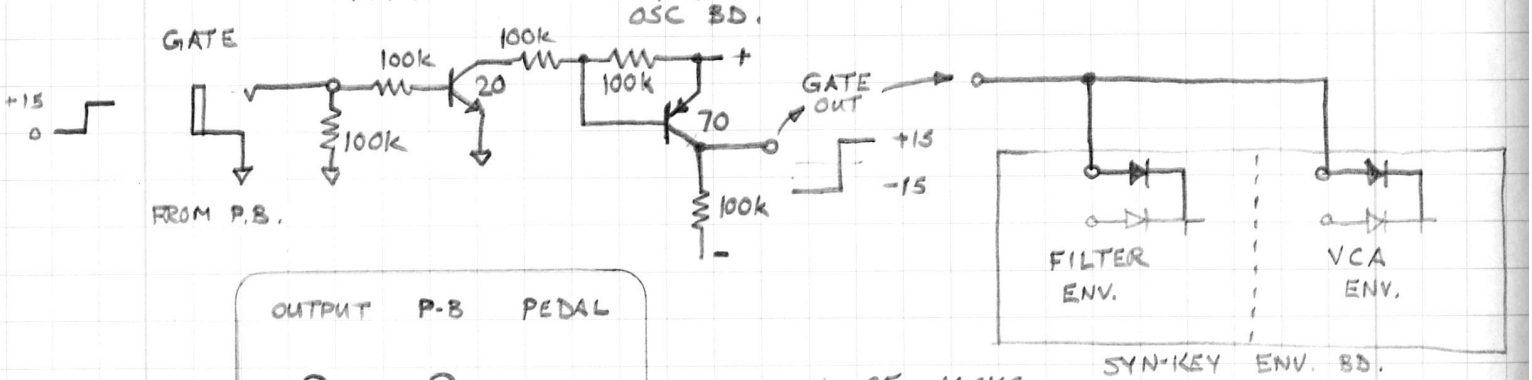


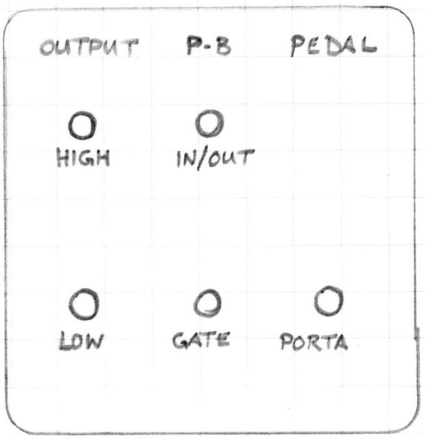
POSITION IS BETWEEN BOTH BROKEN LINE POINTS OF BLUE POT

SYN-KEY / POLY-BOX INTERFACE.



IN/OUT STEREO JACK FOR "Y" CORD FUNCTION





LOCATION OF JACKS ON SYNKEY BACK PANEL

MIC-AMP MOD TO SYN-KEY

